

Notes on *Gnathmocerodes petrifraga* Diakonoff 1967 (Lepidoptera: Tortricidae) associated with *Barringtonia* Trees

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Abstract. *Gnathmocerodes petrifraga* Diakonoff, 1967 (Lepidoptera: Tortricidae) is recorded for the first time from the Indochinese Peninsula (southeastern Vietnam). The larvae feed on leaves of *Barringtonia acutangula* L. (Lecythidaceae) growing in inundated semiaquatic habitats of lowland rivers. No seasonal occurrence of *G. petrifraga* was observed and its larvae were found in dry and wet seasons. A short taxonomical diagnosis is presented with a new description and illustration of the female genitalia. The species is closely related to *G. lecythocera* (Meyr.).

Introduction

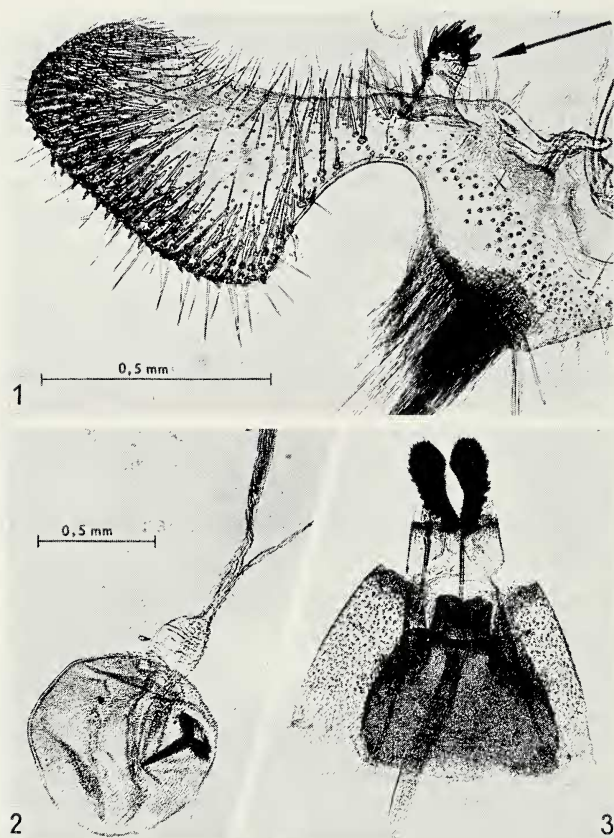
The genus *Gnathmocerodes* s.str. Diakonoff, 1967 (Tortricidae: Olethreutini) is represented by three species in the Oriental Region. There is a great probability that all the species are associated with *Barringtonia* trees (Lecythidaceae), but few data are available (Diakonoff, 1967, 1973). Our paper presents field ecological investigations of *G. petrifraga* Diakonoff, 1967, in southeastern Vietnam, with notes on its taxonomy.

Material Examined

The investigated larvae of *G. petrifraga* were collected on trees of *Barringtonia acutangula* L. growing in the lowland river Song Kinh Dinh near Nha-Ho, 11°37'58"N, 108°52'19"E, 15 km West of Phan Rang, S.E. Vietnam, in April 1982 (dry season) and October 1984 (wet season). The environment of the Phan Rang Plain near Nha-Ho is treated briefly by Spitzer (1983). The larvae were reared under tropical laboratory conditions and six adults (4 males, 2 females) were obtained: 20 April 1982 — 2 males, 1-7 November 1984 — 2 males, 2 females.

Taxonomic Diagnosis

G. petrifraga was described by Diakonoff (1967), including morphological characteristics of male genitalia. Only two males (holotype and paratype) were recorded from the Philippine Islands (Luzon) and India (Calcutta). A supplementary characteristic feature is the shape of the medial process of the valva terminally covered with obtuse spines (Fig. 1). The same shape of the process, with a long stem, is developed on both valvae, one of which is not visible in Diakonoff's (1967) original holotype illustration. The female genitalia were not described and their general appearance is very similar to those of *G. lecythocera* (Meyr.) (not *G. tonsoria* Meyr. - see Diakonoff, 1973): Sterigma with posterior edge slightly curved, signum bursae long, narrow and pointed with a large basal plate (Figs. 2, 3).



Figs. 1-3. *G. petrifraga* Diakonoff: Fig. 1. male genitalia (valva with process indicated by arrow), Figs. 2-3. female genitalia.

Field Observations and Discussion

The larvae of *Gnathmocerodes petrifraga* Diakonoff were found feeding in rolled or folded leaves of *Barringtonia acutangula* L. growing in a large lowland river Song Kinh Dinh of the Phan Rang Plain (monsoon seasonal "savanna" region - see Spitzer, 1983) (Fig. 4). *Barringtonia acutangula* is a typical small tree of the inundated vegetation of Indochinese freshwater formations (Vidal, 1979). The other characteristic plants of Song Kinh Dinh are shrubs of *Homonoia riparia* Lour. (Euphorbiaceae) and *Combretum quadrangula* Kurz. (Combretaceae). During the wet season (October) the water level of the river rises as much as 5 m and only some crowns of *Barringtonia* trees stick out above the water surface.

G. petrifraga was found to be probably an obligatory species associated closely with *Barringtonia acutangula* during both the wet and the dry season in Vietnam. *Barringtonia* trees are the only known food plants of *Gnathmocerodes* (s.str.) species. An exception is *G. lecythocera* (Meyr.) from Java feeding on other two plants (see Diakonoff, 1973). The larvae pupated in light silk cocoons in spun leaves and the pupae (n=6) developed with 7-11 days ($t=26-32^{\circ}\text{C}$). The larvae and pupae are probably highly adapted to the changing water level of the inundated *Barringtonia* ecosystem. The other few lepidopterous species that we found feeding on *Barringtonia acutangula* in Vietnam are polyphagous and widely distributed: *Theretra nessus* (Drury) (Sphingidae) and *Cabanilla* sp. (Lymantriidae). Some ecologically opportunistic species of *Theretra* and *Trabala* (Lasiocampidae) have been recorded by Barlow (1982) feeding on *Barringtonia* sp. in Malaya. Thus *Gnathmocerodes petrifraga* Diakonoff is the only well-adapted stenotopic and non-seasonal species of Lepidoptera, which is characteristic of the inundated *Barringtonia* vegetation type.

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Literature Cited

- BARLOW, H. S., 1982. An Introduction to the Moths of South East Asia. 305 pp. Malayan Nat. Soc., Kuala Lumpur.
- DIAKONOFF, A., 1967. Microlepidoptera of the Philippine Islands. U.S. Nat. Mus. Bull. 257:1-484.
- , 1973. The South Asiatic Olethreutini (Lepidoptera, Tortricidae). Zool. Monogr. Rijksmus. Nat. Hist. Leiden 1:1-699.
- SPITZER, K., 1983. Seasonality of the Butterfly Fauna in Southeastern Vietnam (Papilionoidea). J. Res. Lepid. 22(2):126-130.

VIDAL, J. E., 1979. Outline of Ecology and Vegetation of the Indochinese Peninsula. 109-123 pp. In: Larsen, K. & L. B. Holm-Nielsen (Eds.). Tropical Botany. 453 pp., Academic Press, New York.

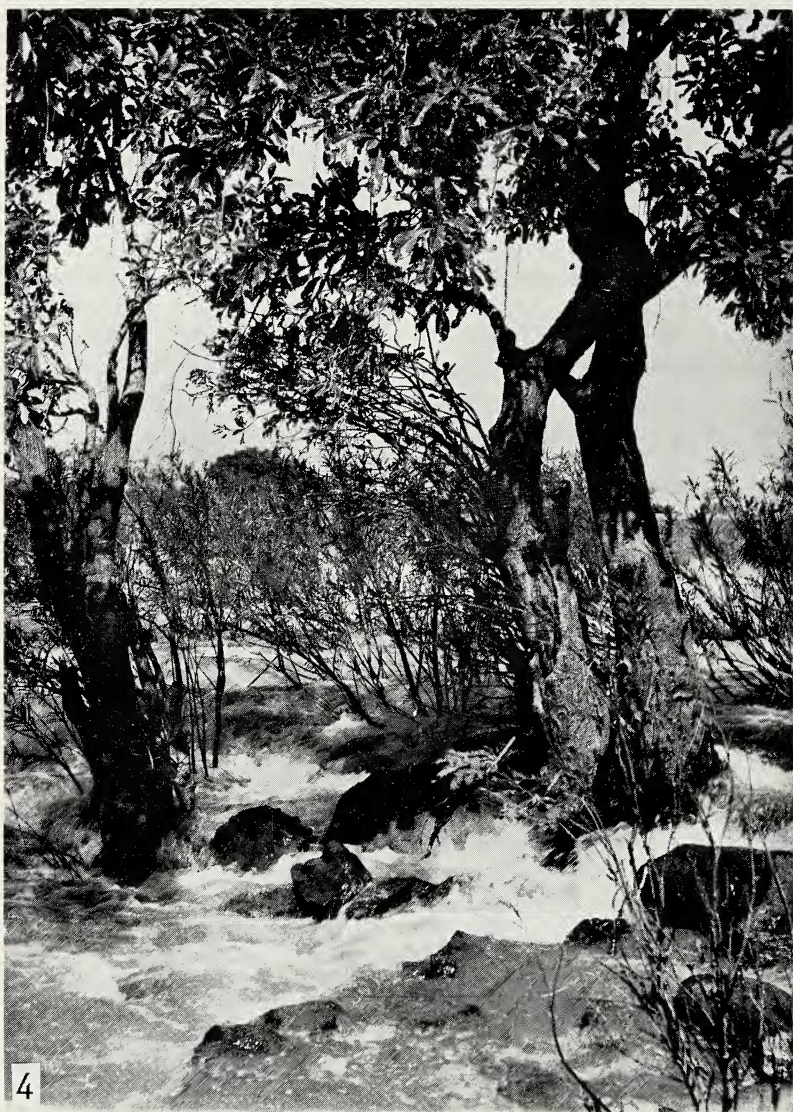


Fig. 4. Habitat of *G. petrifraga* Diakonoff: *Barringtonia acutangula* trees in Song Kinh Dinh, S.E. Vietnam.